



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/936,387	12/18/2001	John Montgomery Hamilton	9013-38	2937

20792 7590 01/07/2003

MYERS BIGEL SIBLEY & SAJOVEC
PO BOX 37428
RALEIGH, NC 27627

EXAMINER

VERBITSKY, GAIL KAPLAN

ART UNIT	PAPER NUMBER
----------	--------------

2859

DATE MAILED: 01/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
09/936,387

Applicant(s)
Hamilton et al.

Examiner
Gail Verbitsky

Art Unit
2859



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Dec 18, 2001
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- *See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 4 6) ☐ Other:

Art Unit: 2859

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119 (a)-(d).

Claim Objections

2. Claim 8, 21 are objected to because of the following informalities:

Claim 8: A) “(tetra-ammoniato)” in line 4 makes the claim language confusing because it is not clear if applicant claims this particular material, since no parenthesis are allowed in the claim,

B) Also, perhaps applicant should replace “tetra-ammoniato” with --tetra-ammoniate--.

Is this a proper interpretation of the invention?

Claim 21: “other magnetic powder” in lines 5-6 makes the claim language confusing because it is not clear what particular magnetic powder applicant claims. Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2859

4. Claims 1-5, 9-10, 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Faller (U.S. 4627741) and Manske (U.S. 5213378).

Faller discloses in Fig. 1 a maximum/ minimum thermometer comprising an expansion liquid which expands/ contracts in response to a temperature change, two indices (pins/ wires) 11, 12 capable of moving within a tube containing the liquid and indicate the temperature. The indices are magnetically attractable (ferrous).

Faller does not disclose a transfer liquid. Faller does not teach the particular aqueous solution for the transfer liquid and the particular liquid for the expansion liquid, as stated in claims 1, 9, with the remaining limitations of claims 1-5, 9-10 and 19.

Manske discloses in Fig. 1 an irreversible dual (maximum/ minimum) thermometer indicator comprising a hollow tube 6, a colorless organic compound/ liquid (expansion liquid) 10 which undergoes volume reduction (constriction). When it constricts, it draws a transfer liquid (not mercury) to an opening of a tube where the liquids are located. The transfer liquid is not miscible with the expansion liquid. The transfer liquid is an aqueous salt solution (inorganic) and is capable to be dyed. The working temperatures are below a freezing point of water, and 127.4⁰F (53⁰C).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to add a transfer liquid, as taught by Manske, to the device disclosed by Faller so as to reinforce a visible indication of an extreme temperature, in order to allow the user

Art Unit: 2859

to judge that there was a period when the temperature was above or below the predetermined temperature, and thus to make the user to judge the quality of the object.

With respect to the particular temperature range, i.e., -30°C and $+50^{\circ}\text{C}$, when the transfer liquid remains liquid (working range), as stated in claim 5: the particular temperature range, absent any criticality, is only considered to be the “optimum” or “preferred” temperature range used by Faller that a person having ordinary skill in the art at the time the invention was made would have been able to determine using routine experimentation based, among other things, on the intended use of the device, etc. See *In re Boesch*, 205 USPQ 215 (CCPA 1980).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the device, disclosed by Faller, work in the temperature range, such as -30°C and $+50^{\circ}\text{C}$, so as to allow the user to monitor the temperature of, for example, a food product being kept in a refrigerator, in order to maintain its safety.

With respect to the particular density of the transfer liquid relative to the expansion liquid, and of the indices relative to the transfer liquid, as stated in claims 2-4 and 19 respectively: because it is very well known in the art that, objects with lower density are floatable on the surfaces of the liquids with higher densities. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to chose the transfer liquid with a lower density than the expansion liquid and the indices of a material with a density lower than the density of the transfer liquid, in the device disclosed by Faller, so as to provide the device with a desired accuracy.

Art Unit: 2859

5. Claims 1-5, 9-10 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Manske in view of Faller.

Manske discloses in Fig. 1 an irreversible dual (maximum/ minimum) thermometer indicator comprising a hollow tube 6, a colorless organic compound/ liquid (expansion liquid) 10 which undergoes volume reduction (constriction). When it constricts, it draws a transfer liquid (not mercury) to an opening of a tube where the liquids are located. The transfer liquid is not miscible with the expansion liquid. The transfer liquid is an aqueous salt solution (inorganic) and is capable to be dyed. The working temperatures are below a freezing point of water, and 127.4⁰F (53⁰C).

Manske does not disclose indices and the remaining limitations of claims 1-5, 9-10 and 19.

Faller discloses in Fig. 1 a maximum/ minimum thermometer comprising an expansion liquid which expands/ contracts in response to a temperature change, two indices (pins/ wires) 11, 12 capable of moving within a tube containing the liquid and indicate the temperature. The indices are magnetically attractable (ferrous).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to add indices, as taught by Faller, to the device disclosed by Manske, so as to reinforce a visible indication of a temperature, and allow the user to see the exact temperature level on a scale.

Art Unit: 2859

With respect to the particular temperature range, i.e., -30°C and $+50^{\circ}\text{C}$, when the transfer liquid remains liquid (working range), as stated in claim 5: the particular temperature range, absent any criticality, is only considered to be the “optimum” or “preferred” temperature range used by Faller that a person having ordinary skill in the art at the time the invention was made would have been able to determine using routine experimentation based, among other things, on the intended use of the device, etc. See *In re Boesch*, 205 USPQ 215 (CCPA 1980).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the device, disclosed by Manske, work in the temperature range, such as -30°C and $+50^{\circ}\text{C}$, so as to allow the user to monitor the temperature of, for example, food, in order to maintain its safety.

With respect to the particular density of the transfer liquid relative to the expansion liquid, and of the indices relative to the transfer liquid, as stated in claims 2-4 and 19 respectively: because it is very well known in the art that, objects with lower density are floatable on the surfaces of the liquids with higher densities. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to chose the transfer liquid disclosed by Manske with a lower density than the expansion liquid and the indices of a material with a density lower than the density of the transfer liquid, in the device disclosed by Faller, so as to provide the device with a desired accuracy.

Art Unit: 2859

6. Claims 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Manske and Faller as applied to claims 1-5, 9-10 and 19 above, and further in view of Gradishar (U.S. 3688582).

Manske and Faller disclose the device as stated above in paragraph 5.

They do not disclose that the transfer liquid can be colored by a suitable dye, as stated in claims 6-7.

Gradishar discloses a device in the field of applicant's endeavor wherein a transfer liquid 7 is a colored liquid which acts as an indicator liquid.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to color the transfer liquid, of the device disclosed by Manske and Faller, as taught by Gradishar, so as to allow the user to obtain a clear visible indication of the temperature to be measure when the indices are not visible enough for the user with a low vision.

7. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Manske, Faller and Gradishar as applied to claims 6-7 above, and further in view of Bealing et al. (U.S. 5990199) [hereinafter Bealing].

Manske, Faller and Gradishar disclose the device as stated above in paragraph 6.

They do not disclose that the transfer liquid can be colored by an Aniline Blue, as stated in claim 8.

Art Unit: 2859

With respect to the particular dye, i.e., Aniline Blue, as stated in claim 8: It is very well known in the art to use an Aniline Blue dye to achieve a stable coloring of liquids. See, for example, Bealing who teaches a device wherein an aniline blue is being used as a dye to achieve a stable color. Bealing teaches a device wherein an aniline blue is being used as a dye to achieve a stable color.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to color the transfer liquid, of the device disclosed by Manske, Faller and Gradishar with an Aniline Blue, as taught by Bealing, so as to allow the user to obtain a stable clear visible indication of the temperature to be measure when the indices are not visible enough for the user with a low vision.

8. Claims 10-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Manske and Faller as applied to claims 1-5, 9-10, 19 above, and further in view of Hickman (U.S. 1942857).

Manske and Faller disclose the device as stated above in paragraph 5.

They do not disclose the particular liquid as the transfer liquid, as stated in claims 10-18.

Hickman disclose a device in the field of applicant endeavor whose transfer liquid comprises a halogenated hydrocarbon, diethylene glycol. Hickman states that these materials are good lubricants and hardly soluble in an expansion liquid (for example, mercury).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the transfer liquid, of the device disclosed by Manske and Faller,

Art Unit: 2859

comprise a halogenated hydrocarbon, diethylene glycol, as taught by Bealing, because these particular materials are good lubricants which will allow the transfer liquid to move along the tube, and not soluble in the expansion liquid, such as mercury, as already suggested by Hickman.

With respect to the particular liquid (material) used for the transfer liquid, as stated in claims 12-15, 17: the particular liquid (material) used for the transfer liquid, absent any criticality, is only considered to be the “optimum” or “preferred” material used for the transfer liquid of the device disclosed by Manske and Faller that a person having ordinary skill in the art at the time the invention was made using routine experimentation would have found obvious to provide for the transfer liquid disclosed by Manske and Faller since these materials are commonly used for thermometric liquids, and since it has been held to be a matter of obvious design choice and within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use of the invention. See *In re Leshin*, 125 USPQ 416.

9. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Faller and Manske as applied to claims 1-5, 9-10 and 19 above, and further in view of GB 0001967/GB041882 [hereinafter GB].

Faller and Manske disclose the device as stated above in paragraph 4.

They do not disclose the limitations of claim 20.

GB discloses indices *c*, *d* enclosed in a glass tube.

Art Unit: 2859

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to enclose the indices, disclosed by Faller and Manske, in a glass tube, as taught by GB, so as to protect them from corrosion when in a direct contact with the transfer liquid, and thus, to achieve a desired accuracy of the device.

10. Claims 21- 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Faller and Manske as applied to claims 1-5, 9-10 and 19 above, and further in view of Bernard (U.S. 4908503).

Faller and Manske disclose the device as stated above in paragraph 4.

They do not disclose the particular material to make indices, as stated in claims 21-22.

Bernard describes a marking plate (index) made of a plastic with a magnetic powder injected (mixed).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device disclosed by Faller and Manske, so as to make indices of a material comprising a plastic mixed with a magnetic powder, as taught by Bernard, because both of them are alternate types of magnetic material which will perform the same functions of providing an indication, if one is replaced with the other.

11. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various

Art Unit: 2859

claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art cited in the PTO-892 and not mentioned above disclose related devices.

13. Any inquiry concerning this communication should be directed to Examiner Verbitsky who can be reached at (703) 306-5473 Monday through Friday 7:30 to 4:00 ET.

Any inquiry of general nature should be directed to the Group receptionist whose telephone number is (703) 308-0956.

GKV

December 23, 2002

Gail Verbitsky



Patent Examiner, TC 2800